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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/764,224	01/16/2001	Vincent Marinkovich	1130295-900111	7015

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EXAMINER	
YAEN, CHRISTOPHER H	

ART UNIT	PAPER NUMBER
1642	

DATE MAILED: 04/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/764,224	MARINKOVICH, VINCENT	
	Examiner	Art Unit	
	Christopher H Yaen	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,12,20 and 21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,12 and 20* is/are rejected.

7)☒ Claim(s) *21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

RE: Marinkovich V
Priority Date: 16 July 1998

Election/Restrictions

1. Applicant's election without traverse of group I (claims 1-6,12,20-21) in Paper No. 3/29/2004 is acknowledged.

2. Accordingly, claims 7-11 and 13-19 are canceled without prejudice or disclaimer.

3. Claims 1-6,12, and 20-21 are theefore pending and examined on the merits.

Claim Objections

4. Claim 21 is objected to because of the following informalities: claim 21 refers to claim 24 of which is not present in the claim set submitted as filed. Appropriate correction is required.

Claim Rejections - 35 USC § 112, 2nd paragraph

5. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to the recitation of "wherein the monoclonal antibody further includes an antigen or transfer factor", it is vague and indefinite because it is unclear as to how an antibody is to include both an antigen and transfer factor. For purposes of

examination, the claim will be read to the extent that the kit is to further include an antigen and transfer factor.

Claim Rejections - 35 USC § 112, 1st paragraph

6. Claims 1-3, 12, and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The written description in this case has only set forth a composition comprising antibodies directed against cancer cell antigens, wherein the monoclonal antibody is conjugated to either asp f1 or mumps virus, and therefore the written description in this case is not commensurate in scope to claims that read on monoclonal antibodies that are conjugated to any and all antigens.

The support for antigens is provided in the specification on page 6, wherein it is disclosed that antigens are capable of initiating a cell mediated response. The specification further discloses that the antigens can be "fungal antigens, viruses or viral components, tuberculo protein, coccidioidin, BCG, etc." However, nowhere beyond the mere mention of these antigens does the specification provide support. This is insufficient to support the claim to the broad genus. There does not appear to be an adequate written description in the specification as-filed of the essential structural feature for antigens that have the recited function of initiating a cell mediate response. The Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1

"Written Description" Requirement make clear that the written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species by actual reduction to practice, reduction to drawings, or by disclosure of relevant, identifying characteristics, i.e., structure or other physical and or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the genus (Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 2001, see especially page 1106 3rd column).

Applicant does not appear to have reduced to practice the broad genus of any and all antigens with exception to asp f1 and mumps virus. Neither has Applicant provided a sufficient written description of any structure that may be correlated with the desired cell stimulating function. An "antigen" encompasses *any* molecule with the functional activity of stimulating T cells. Thus the genus of compounds encompassed by this term is extensive and the artisan would not be able to recognize that Applicant was in possession of the invention as now claimed.

Consequently, Applicant was not in possession of the instant claimed invention. See Regents of the University of California v. Eli Lilly and Co. 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997). Adequate written description of genetic material "'requires a precise definition, such as by structure, formula, chemical name, or physical properties,' not a mere wish or plan for obtaining the claimed chemical invention." Id. 43 USPQ2d at 1404 (quoting Fiers, 984 F.2d at 1171, 25 USPQ2d at 1606). The

disclosure must allow one skilled in the art to visualize or recognize the identity of the subject matter of the claim. Id. 43 USPQ2d at 1406. A description of what the genetic material does, rather than of what it is, does not suffice. Id.

Applicant is directed to the Guidelines for the Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1 "Written Description" Requirement, Federal Register, Vol. 66, No. 4, pages 1099-1111, Friday January 5, 2001.

Claim Rejections - 35 USC § 112, 1st paragraph

7. Claims 1-6, and 12 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a composition comprising an antibody specific for a cancer cell conjugate to a asp f1 or mumps virus, and a transfer factor does not reasonably provide enablement for a vaccine comprising an antibody specific for a cancer cell conjugate to a asp f1 or mumps virus, and a transfer factor. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

The claims are drawn to a vaccine comprising an antibody specific for a cancer cell conjugate to an antigen, and a transfer factor. The specification teaches the construction and the administration of antibodies specific for cancer cells conjugated to an asp-f1 or mumps virus antigen, but fails to provide an enabling disclosure for the production or the use of a vaccine comprising such elements.

Because the claims are drawn to a "vaccine", it inherently carries with it some prophylactic effects in the treatment of cancer. As such, reasonable guidance with respect to preventing any cancer relies on quantitative analysis from defined populations which have been successfully pre-screened and are predisposed to particular types of cancer. This type of data might be derived from widespread genetic analysis, cancer clusters, or family histories. The essential element towards the validation of a preventive therapeutic is the ability to test the drug on subjects monitored in advance of clinical cancer and *link* those results with subsequent histological confirmation of the presence or absence of disease. This irrefutable link between antecedent drug and subsequent knowledge of the prevention of the disease is the essence of a valid preventive agent. Further, a preventive administration also must assume that the therapeutic will be safe and tolerable for anyone susceptible to the disease. While various antibody-based therapeutics have shown some promising efficacy in the therapy of cancer, (Weiner L.M., Seminars Oncology, Vol. 26, No. 4, Suppl 12, pages 41-50, 1999), a recent review of such therapies did not indicate nor suggest that such therapies would be successful in the prevention of cancer. Furthermore, Weiner teaches (page 43) that one of the obstacles to successful monoclonal antibody therapy is insufficient target specificity. Thus, for an antibody to be somewhat successful there must be a target. In the case of the instant invention, the target is any antigen on a surface of a cancer cell, and the specification fails to contemplate the safety considerations in administering preventive monoclonal antibodies in the form of a vaccine. No data has been provided to show that such

antibody based "vaccines" are effective in preventing or having prophylactic effects on a subject.

One cannot extrapolate the teachings of the specification to the scope of the claims because the specification provides no exemplification of or guidance on how to use the claimed vaccine for immunization purposes with any predictability. With regards to tumor immunotherapy, the goal of tumor vaccination is the induction of tumor immunity to prevent tumor recurrence and to eliminate residual disease. Further, treatment of cancer in general is at most unpredictable, as underscored by Gura (Science, v278, 1997, pp.1041-1042) who discusses the potential shortcomings of potential anti-cancer agents including extrapolating from in-vitro to in-vivo protocols, the problems of drug testing in knockout mice, and problems associated with clonogenic assays. Indeed, since formal screening began in 1955, thousands of drugs have shown activity in either cell or animal models, but only 39 that are used exclusively for chemotherapy, as opposed to supportive care, have won approval from the FDA (page 1041, 1st column) wherein the fundamental problem in drug discovery for cancer is that the model systems are not predictive. All of this underscores the criticality of providing workable examples which is not disclosed in the specification, particularly in an unpredictable art, such as cancer therapy.

In view of the teachings above, and the lack of guidance and or exemplification in the specification, it would not be predictable for of skill in the art to use the pharmaceutical compositions or vaccine formulations as contemplated in the disclosure.

Thus, it would require undue experimentation by one of skill in the art to practice the invention as claimed.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1,12, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kranz *et al* (PNAS USA 1995 September; 92:9057-9061). Kranz *et al* teach a composition comprising a monoclonal antibody conjugated to a folate ligand (see page 9058). The specification teaches that "transfer factor" is essentially lymphocytes (see page 6 of specification). Kranz *et al* teach the antibody conjugate in the presence of T lymphocytes (see page 9058 under "Cytotoxicity Assay"). It is further taught that the composition is useful for the treatment of cancer cells (see page 9059).

Conclusion

10. No claim is allowed. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher H Yaen whose telephone number is 571-272-0838. The examiner can normally be reached on Monday-Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher Yaen
Art Unit 1642
April 12, 2004

GARY NICKOL
PRIMARY EXAMINER